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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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09/590,805 06/09/00 BRADY

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MM91/1024

EXAMINER

~~NOTED~~

ART UNIT

PAPER NUMBER

2811
DATE MAILED:

10/24/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/590,805

Applicant(s)
Brady et al.

Examiner
ORI NADAV

Art Unit
2811



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Aug 20, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above, claim(s) 11-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jun 9, 2000 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

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DETAILED ACTION

Election/Restriction

1. Applicant's election of claims 1-10 in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

2. The disclosure is objected to because of the following informalities: On page 10, the serial numbers of co-pending applications are not provided.

Appropriate correction is required.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a) because they fail to show FOX region including high concentration of positive charge trapping centers as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Correction is required.

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Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 4-6 and 10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

6. There is no adequate description in the text of the specification for an integrated circuit comprises a microprocessor that comprises a control sequencer coupled to an arithmetic logic unit, and an integrated circuit comprises an arrangement of memory cells operatively coupled to an address decoder, as recited in claims 4-5 and 10, in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

7. There is no support in the text of the specification for a third lead of the second device being connected to ground and power, as recited in claim 6, in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-2 and 4-10, insofar as in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalnitsky (5,589,708) or Murdock et al. (5,748,412).

Kalnitsky teaches in figure 2 an integrated circuit comprising a first device and a second device (column 3, lines 33-48) wherein the effective threshold voltage of the first device is more susceptible to be lowered by ionizing radiation than is the effective threshold voltage of the second device.

Kalnitsky does not teach first and second devices comprising a first lead, a second lead, and a third lead, wherein the third lead is electrically connected to ground.

Murdock et al. teach in figure 2 an integrated circuit comprising a first device 30 (figure 3c) and a second device (column 1, lines 16-30) wherein the effective threshold voltage of the first device is more susceptible to be lowered by ionizing radiation than is the effective threshold voltage of the second device (column 10, lines-26-45).

Murdock et al. do not teach first and second devices comprising a first lead, a second lead, and a third lead, wherein the third lead is electrically connected to ground.

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APA teaches in figure 2 first and second devices comprising a first lead, a second lead, and a third lead, wherein the third lead is electrically connected to ground.

APA teaches in figure 2 first and second devices comprising a first lead, a second lead, and a third lead, wherein the third lead is electrically connected to ground.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use first and second devices comprising a first lead, a second lead, and a third lead, wherein the third lead is electrically connected to ground in Kalnitsky and Murdock et al.'s device, because it is conventional to connect a device to power and ground in order to be able to operate the device.

Regarding claims 2 and 9, Kalnitsky teaches a first device comprises an n-type metal-oxide semiconductor field-effect transistor. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a first device comprises an n-type metal-oxide semiconductor field-effect transistor in Murdock's device, in order to form a diode in a well known alternative method.

Regarding claims 4,5 and 10, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the integrated circuit in a microprocessor that comprises a control sequencer coupled to an arithmetic logic unit, and in an arrangement of memory cells operatively coupled to an address decoder in

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Kalnitsky and Murdock et al.'s device, in order to use the device in an application which requires a microprocessor that comprises a control sequencer coupled to an arithmetic logic unit, and an arrangement of memory cells operatively coupled to an address decoder.

Regarding claim 6, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to connect the second lead of the first device to ground, the third lead of the first device to power, and the third lead of the second device to power in Kalnitsky and Murdock et al.'s device, in order to use the device in a specific application.

Regarding claim 7, Murdock et al. teach a first device shorts power to ground when the device has been exposed to ionizing radiation. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to short a first device's to ground when the device has been exposed to ionizing radiation in Kalnitsky's device, in order to use the device in an application which requires circuit protection.

Regarding claim 8, Kalnitsky teaches implanting a portion of the second device with a higher concentration of negative charge trapping centers than the first device.

Therefore, Kalnitsky teaches a portion of the first device having a higher concentration

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of positive charge trapping centers than the second device, as claimed. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a first device having a portion of higher concentration of positive charge trapping centers than the second device, in Murdock's device, in order to obtain a soft diode.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kalnitsky, Murdock et al. and APA, as applied to claim 1 above, and further in view of Tursky et al. (5,294,843).

Kalnitsky, Murdock et al. and APA teach substantially the entire claimed structure, as applied to claim 1 above, except the method of forming a soft diode. Tursky et al. teach forming a first device with a field oxide that has been implanted with a material that traps positive charge when the first device is exposed to ionizing radiation and the second device has not been implanted with the material (column 9, lines 31-51).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form a first device with a field oxide that has been implanted with a material that traps positive charge in prior art's device, in order to obtain a soft diode with a well known alternative method.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References D and N are cited as being related to soft diodes.

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Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to *Examiner Nadav* whose telephone number is **(703) 308-8138**. The Examiner is in the Office generally between the hours of 7 AM to 3 PM (Eastern Standard Time) Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas, can be reached at **(703) 308-2772**.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Technology Center Receptionists** whose telephone number is **308-0956**

Ori Nadav

October 22, 2001

Steven Loke
Primary Examiner

